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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,302	04/02/2004	Charles E. Nichols	LSI.89US01 (03-1502)	1857
24319	7590	05/05/2006	EXAMINER	
LSI LOGIC CORPORATION 1621 BARBER LANE MS: D-106 MILPITAS, CA 95035			SCHLIE, PAUL W	
			ART UNIT	PAPER NUMBER
			2186	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/817,302	Applicant(s) NICHOLS ET AL.	
	Examiner Paul W. Schlie	Art Unit 2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-14 have been examined.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1, 7 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Lubbers et al. (5,774,643).

As per independent claims 1, 7 and 11, Lubbers et al. teaches that writes to a data storage unit comprising a logical volume within a RAID storage system may be cached such that in advent of a failure and/or functional cessation of said storage unit (such as may exist upon updating its firmware as claimed), whereby said writes may be subsequently completed upon its corresponding remedy (see abstract, figures 3-8, and columns 4-5 lines 36-6); where in view of that it is known to those of ordinary skill in the art and as further reviewed by the reference (see Background of The Invention) that RAID storage systems may be configured to inherently remain fully functional in the presence of ~~X~~ the operational cessation of a single redundant element comprising such a system, and/or partially functional upon the failure of otherwise non-further redundant storage elements (i.e. being inherent in that writes may be cached to an otherwise non-operational storage unit as taught) and thereby may remain on-line until otherwise

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desired; all claim elements are considered taught and/or inherent in the reference cited although in other form.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-6, 8-10, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lubbers et al. (5,774,643).

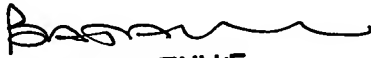
As per claims 2-6, 8-10, and 12-14, being dependent on claim 1, 7, or 11; as that taught by Lubbers et al. considered to be applicable to any operational cessation of a storage unit as may obviously result from the updating of firmware, diagnostic tests, etc. per claim (2) and applicable to any RAID configuration per claim (3), that said volume may comprise a plurality of disks per claim (4), and is implicit that said write cache is logically distinct from said volume per claim (6); where although Lubbers et al. does not teach that the non-volatile storage utilized to cache writes may comprise a disk drive per claim (5), as a disk drive is well known by those of ordinary skill in the art to be a non-volatile storage device, it is considered obvious that a the non-volatile write cache as taught by Lubbers et al. may comprise a disk drive, for the benefit of cost effectively caching large writes cost effectively; and as claims (8-10 and 12-14) are considered encompassed by claims (2-6) in other form, all claims are rejected based upon the same arguments as presented above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul W. Schlie whose telephone number is 571-272-6765. The examiner can normally be reached on Mon-Thu 8:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 517-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


PIERRE BATAILLE
PRIMARY EXAMINER
5/1/06